Project Leader's Report

July 2005

USDA Forest Service - Southern Research Station - 320 Green Street Athens GA 30602 - http://www.srs.fs.fed.us/disturbance

DISTURBANCE AND MANAGEMENT OF SOUTHERN ECOSYSTEMS

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Outreach Activities:

• Three organized groups with a total of 58 people toured the Brender Demonstration Forest during July. These included personnel for a training session on "Forest Roads in the Piedmont," a Mercer University Biology Lab on Forest Succession, and an Oconee Ranger District pre-work timber sale conference.

• Approximately 30 visitors came by the office at Brender Forest for information and only 50 people hiked the Hitchiti Interpretive Trail.

• Gary Achtemeier presented two invited talks at the North Carolina Division of Forest Resources Annual Meeting in Kinston, NC. The subjects of the talks were: "The Southern High Resolution Modeling Consortium (SHRMC) Current Products and Future Plans," and "Smoke Models – What's Coming Down the Pike."

An example of a plume-dominated fire.

Technology Transfer:

• One important product from the National Fire and Fire Surrogate study (NFFSS) will be technology transfer to land managers. To help meet this goal, the Science and Management Integration Committee of the NFFSS decided to host local or regional workshops. Site mangers for the South Carolina Piedmont, Southern Appalachian Mountains, and Ohio Hill Country sites have decided to combine their efforts for a workshop focused on mixed-species management. Dan Yaussy (NE Station), Ralph Boerner (Ohio State), and Tom Waldrop are working on the arrangements. The workshop is tentatively scheduled for January 24-25, 2006 in Asheville, NC. The organizers plan to focus on core discipline results (vegetation, soils, wildlife, health, fuels, economics) in a conference setting on the first day and on additional studies during a field trip on the second day.

Where is Joe? Fire research is a smoky job.

• Joe O'Brien and Mac Callaham presented a discussion on fire ecology to the citizens of Marsh Harbour, Bahamas. The presentation focused on fire ecology and preliminary results of their fire research on Caribbean pine forests.

• Kenneth Outcalt and Michelle Cram visited Julie Hovis and other staff of Shaw Air Force Base, near Wedgefield, SC. Ken looked at recently prescribed-burned areas, evaluated their burning program, and offered technical input into possible causes of mortality and how to minimize it when burning longleaf pine stands. He provided a follow-up written report of the visit and relevant publications to assist them in restoring their longleaf pine stands.

Ken Outcalt discussing fire use for longleaf restoration with Julie Hovis, Shaw AFB.

• David Combs and Mike Allen assisted the Oconee District in installing two study plots on the Hitchiti Experimental Forest that will be used to monitor and improve the District's Prescribed Fire Program.

Mike Allen installing fire monitoring plot with Mike Caldwell of the Oconee National Forest.

Meetings/Reports:

• Gary Achtemeier attended the National Fire Plan Fire Consortia for Advanced Modeling of Meteorology and Smoke (FCAMMS) Director's Meeting in Chicago, IL. The purpose of the meeting was to determine whether the existing corporate structure of regional consortia will remain in place or be dissolved during the next funding cycle. Detailed meeting notes were taken by Doug Fox and are available for interested parties.

• John Stanturf and team gave an overview of the unit's fire research to Dave Fredericks, new fire staffer to the Southern Group of State Foresters. Fred Allen, SRS Liaison to the SGSF, set up the meeting. Also attending were Alan Dozier and Dan Chen from the Georgia Forestry Commission.

• John Stanturf spent a stimulating afternoon with the Advisory Board of the European Forest Institute, discussing the future of European forestry and the future role of the new structure of EFI. As of September 4th, EFI transitions from a Finnish NGO to an international organization.

• Mac Callaham, Dana Camp and Susie Bennett participated in a special workshop, hosted by Paul Hendrix of the University of Georgia, Institute of Ecology. The workshop focused on the biogeography, evolution, and ecology of earthworms on a global scale. Participants in the week-long workshop attended lectures in the mornings, and practical laboratory sessions in the afternoons. The labs were fun for everyone because they all received practical experience at identification of earthworm families from around the world.

Sam James, University of Kansas - Kansas Museum of National History, demonstrating dissecting techniques on Puerto Rican earthworm.

Susie Bennett, Dana Camp, Mac Callaham (back row left to right) and other participants in earthworm workshop hosted by University of Georgia.

Partnerships:

• Ken Outcalt met with Jon Robinson, Park Manager of Myakka River State Park, and his staff, at park headquarters in Florida. They discussed the possible extension, for 5 additional years, of the Fire and Fire Surrogate Study in the southern coastal plains (SRS-4104-6008), located on park property. Outcalt explained what this entailed and the importance of their role in adding to our knowledge of management alternatives for the flatwoods ecosystem.

Maykka River State Park, FL.

• Tom Waldrop began a cooperative research agreement with Dr. Chris Moorman of North Carolina State University to examine the impacts of fuel reduction treatments on herpetofauna in the southern Appalachian Mountains. The work will be done as a component of the National Fire and Fire Surrogate Study and on the Green River Gamelands of the North Carolina Wildlife Resources Commission. Dr. Moorman will be working closely with Tom Waldrop, Katie Greenberg (SRS-4201), and Dean Simon (NCWRC). Although other studies have addressed herpetofaunal response to fire, this study will be unique in several ways. It will be one of the few to address both fire and mechanical treatments in the southern Appalachians and it will be the only study to examine impacts occurring after repeated prescribed burning. Burning will be

Prescribed burn in southern Appalachians.

conducted during the winter of 2005-2006 and herpetofauna will be measured throughout 2006.

• Alex Clark initiated a study with Laurie Schimleck, UGA and Bailian Li, North Carolina State University on "Rapid Techniques for Screening Wood Properties for Genetic Improvement of Loblolly Pine." This work is funded by an Agenda 2020 grant from the Washington Office.

• Alex Clark and students traveled to Alaska to sample Sitka spruce for their collaborative work

Grant Harvey cutting Sitka spruce in Ketchikan, Alaska.

Michael Westbrook cataloging samples of Sitka spruce in Ketchikan, Alaska.

with the Pacific Northwest Research Station scientists on wood quality. They will analyze their samples in Athens.

• Alex Clark initiated another Agenda 2020 funded study with Fikret Isik, Bailian Li, and Bronson Bullock, North Carolina State University on "Prediction of Whole-Stem Wood Quality of Superior Loblolly Pine Clones for Deployment."

• Tom Waldrop initiated an agreement with Geoff Wang, Clemson University, to examine "Epidemic Southern Pine Beetle attacks: A problem of fuel-loading or an opportunity for management?" This work is funded by a grant from the Joint Fire Sciences Program.

Southern Pine bark beetle larvae feed out in a fan pattern away from the adult gallery. Photo by USFS Archives.

Science Highlight:

Climate and Fire Season Severity

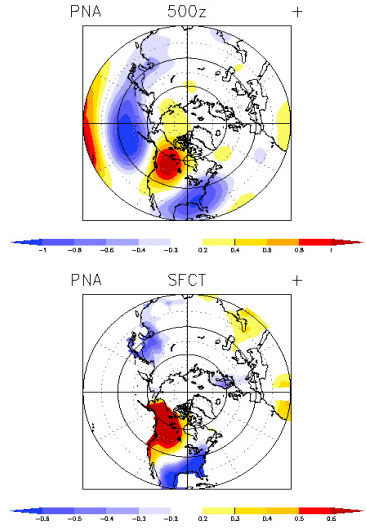
Our ability to effectively and efficiently mitigate climate-related natural disasters would benefit greatly if we knew what to expect over a period of several months or a season. The ability to predict when to expect an event, or how many significant events to expect, would allow efficient mobilization of resources. In the case of wildfire, this would be the ability to plan for just enough suppression resources, placed properly for quick initial attack to keep the area burned and the size of the fire to a minimum.

El Niño is the kind of climate anomaly that promises such predictive ability. Since the extreme El Niño event of 1982-1983, a myriad of natural disasters have been associated with the sea surface temperature anomalies in the equatorial Pacific Ocean that define the El Niño Southern Oscillation (ENSO). For the southeastern United States, the warm sea surface temperature anomalies characteristic of El Niño relate to enhanced winter precipitation with potential for flooding; however, the cold anomalies of La Niña bring far more potential for natural disasters, as it is linked to increased hurricane and tornado activity, as well as prolonged periods of drought and wildfire. In 1991, Jim Brenner of the Florida Division of Forestry discovered a strong correlation between the negative phase of ENSO (La Niña) and acreage burned by wildfires within the state. This relationship became the basis of seasonal predictions of fire season severity made by the state and used in their planning. Scott Goodrick and cooperators at Florida State University, particularly Phil Cunningham, revisited the data used by Brenner and found more interesting relationships.

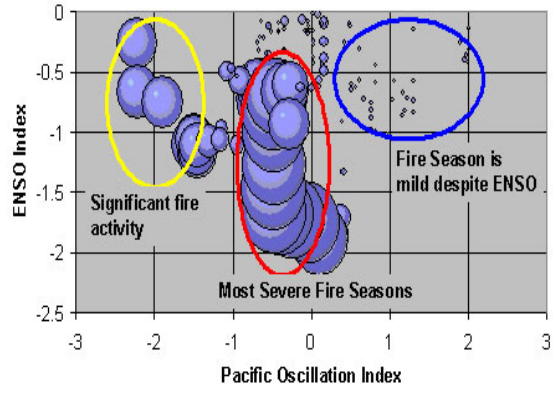
In the original work, data on monthly area burned were compared to sea surface temperature anomalies over the years of 1981-1991. A linear relationship was found that indicated that cold sea surface temperature anomalies were capable of explaining approximately 50% of the variance in monthly acres burned for Florida. This relationship changed dramatically as the time series was extended through 1999; the correlation declined, explaining less than 30% of the variance in area burned. One interpretation of this result is that the Florida Division of Forestry did a better job planning for and fighting fires by using the relationship to anticipate severe fire seasons, which led to a reduction in acres burned. A far more likely interpretation is that the time series was not long enough to adequately sample a wide enough range of climate variability. This is a common problem in climate work, but the story doesn't end here.

Even though the ENSO is considered to be one of the most dominant climate oscillations (anomalies), other modes of variability exist and likely play a strong supporting role. The Pacific Decadal Oscillation (PDO) is another mode that has received a great deal of attention since the late 1990s. The PDO has a similar spatial pattern to ENSO, but differs dramatically in its temporal pattern; events last decades with PDO, rather than the 6-18 months for ENSO. The original work by Brenner focused on a period of positive PDO but the analysis of the longer time series captured a switch to a negative phase period of the PDO. Adequately accounting for variability on the time scale of the PDO, however, would require a substantially longer time series than we have used so far.

Two other modes of variability linking the Pacific Ocean to the southeastern United States are the North Pacific and Pacific North American patterns (NP and PNA). These modes exhibit much greater interannual variability than the PDO. Although these patterns differ in spatial extent, both represent a pressure dipole between the northern Pacific and the southeastern U.S. In their negative phase they act to decrease pressure in the northern Pacific while favoring the development of a ridge of high pressure over the Southeast. The relationship between high pressure and dry conditions implies that these oscillations may play a role in determining fire season severity in the Southeast. We are just beginning to unlock the relationships between climate anomalies with differing spatial and temporal patterns and their relationships to fire season severity. This diagram illustrates the relationship between Pacific teleconnection patterns (NP and PNA), ENSO, and acres burned in Florida. The size of the bubbles indicates the area burned in a season. Note that not all cold ENSO events are equal in their fire potential. To read about the original work by Jim Brenner, see Brenner, J. 1991. Southern Oscillation anomalies and their relation to Florida Wildfires. Fire Management Notes, 52(1) 28-32.



These maps show how the Pacific North American Pattern influences the atmosphere in its positive phase. Anomalies in the height of the 500 mb pressure surface (top) show below normal heights for the Southeast, which are linked to below normal temperatures (bottom).



Relationship between Pacific tele-connection patterns (NP and PNA), ENSO and acres burned in Florida (size of bubbles) showing that not all cold ENSO events are equal in their fire potential.

Funding:

• The Smoke Management Team (Achtemeier, Goodrick, and Liu) submitted a proposal to the VISTAS, "Refining the Temporal, Spatial, and Magnitude of Emissions from Southern Prescribed Fires for 2002." Funding requested for this 1-year project is $115,867.

• The Smoke Management Team received $50,000 in additional funding from Pete Lahm, Fire and Aviation Management in the WO, to support on-going assistance to the Rocky Mountain Modeling Consortium.

Visitors

• Dave Fredericks, fire staffer for the Southern Group of State Foresters, Fred Allen, SRS liaison to the SGSF, Georgia Forestry Commission fire boss Alan Dozier and fire meteorologist Dan Chen visited the unit to provide Dave with an overview of fire and smoke research.

• Mike Rauscher visited John Stanturf and Ken Outcalt to discuss the future of the fire hypertext encyclopedia.

• Mac Callaham hosted Carla Giai, a participant in the earthworm workshop. Carla is a Ph.D. student in Dr. Ralph Boerner's research group of the Evolution, Ecology and Organismal Biology Department at Ohio State University. Carla is studying earthworm ecology in the Fire and Fire Surrogate Study sites in southern Ohio.

• The Uplands Team at Clemson was visited by Dr. Patrick Brose of the Northeastern Experiment Station. Pat is a former member of that team who assisted Tom Waldrop in the early stages of his research on Table Mountain pine regeneration. The purpose of the visit was to discuss his work with dendrochronology of Table Mountain pine and to visit study sites that were regenerated by a stand-replacement fire in 1997

Photo of Table Mountain Pine cross-section from Ultimate Tree-Ring Web page.

Personnel News:

• Ken Outcalt has accepted the position of Managing Editor of the Southern Fire Encyclopedia. He will be assisted by Associate Editors Tom Waldrop and Rick Reitz. The Southern Fire Encyclopedia is part of the Forest Encyclopedia Network activity of the Southern Research Station.

• With the closing of the tree root biology research sub-unit at Athens, SRS-4104 is moving into much needed laboratory space in on the ground floor of the South Building. Over the next several months, various staff will move offices as well. Eventually, all Athens-based staff will be in the South Building.

• Rick Reitz was on fire detail in Cedar City, UT where he served as fire behavior analyst for the Color Country Geographic Area.

• Rick began the first half of his two-week detail to assist with the 2005 Boy Scout Jamboree being held at Fort A.P. Hill, Bowling Green, Virginia.

• Mike Thompson, formerly with SRS-4154, has joined the unit to assist Alex Clark with wood quality research. Welcome to the unit, Mike.

• We say good-bye to student workers Claire Samaha, Susan Bennett, Leslie Wolcott, Robert Gordon, and Scott Howell. Claire, Susan, and Leslie will attend graduate school; Robert and Scott have taken jobs with F&W Forestry.

• Eran Kilpatrick, a Ph.D. student in the Clemson University Department of Forestry and Natural Resources, successfully completed his doctoral preliminary examination. Eran's dissertation will be on the impacts of fuel reduction treatments on birds and herpetofauna at the Piedmont site of the National Fire and Fire Surrogate Study (NFFS). He will also conduct the national analysis of herpetofaunal responses for the NFFS. His study is funded through RWU-4104 and the Joint Fire Science Program; Tom Waldrop serves on his research advisory committee. Each committee member submitted a number of questions for the written portion of the exam, along with a topic for a proposition. Eran selected a proposition dealing with the impacts of white-tailed deer herbivory on herpetofaunal populations. Another portion of the exam dealt with the distribution of herpetofauna throughout the Piedmont. This portion of the exam will be submitted for publication. Congratulations to Eran for a fine job.

News from Around the Region:

• A new Regional Forester for the South (R-8) has been announced: Charles (Chuck) Myers. Myers, the director of Forest Management in Washington D.C., replaces Bob Jacobs who retired in June. Myers began his Forest Service career in 1979 on the Allegheny National Forest in Pennsylvania. He held several positions throughout the Forest Service's Eastern Region, including land management planning, appeals, budget and public affairs. In addition, he was a deputy forest supervisor on the White Mountain National Forest, New Hampshire and forest supervisor for the Monongahela National Forest, West Virginia. He also held temporary assignments as forest supervisor for the Chippewa (Minnesota) and White Mountain (New Hampshire) National Forests, and deputy regional forester in the agency's regional office in Milwaukee. He joined the national headquarters in 2001 and has held management positions in recreation process streamlining and forest management. Myers is a graduate of the Pennsylvania State University with a bachelor's and master's in forest science.

• George Mason University has initiated a new EastFIRE Laboratory (ESL) with William Sommers, Professor in the School of Computational Science as Director. Bill is retired Vegetation Management Staff Director, USDA Forest Service Research and Development and an atmospheric scientist by training.

• Jim Granskog, Project Leader of SRS-4802, Evaluation of Legal, Tax, and Economic Influences on Forest Resource Management in New Orleans, retired this month. Rod Busby, a scientist in the project, was named as Project Leader.

• Elizabeth Estill, Deputy Chief for Programs, Legislation, and Communication, has a new assignment, beginning in September. Estill keeps the title of Deputy Chief in her new assignment overseeing the Cooperative Conservation model centering on the Lower Mississippi Alluvial Valley. The PLC deputy area will be disbanded and responsibility assigned to other deputy areas. Estill will be located with the Forest Inventory and Analysis unit in Knoxville, TN. The program will be announced formally at the White House Conference on Cooperative Conservation, to be held in St. Louis, MO in August.

News from Around the Region:

• Jim Fenwood, forest supervisor on the Mendocino National Forest in California, returns to the South as Director of Biological and Physical Resources. He replaces long-time Director Tom Darden, who accepted the offer earlier this year to lead the Southern Region's Cooperative Forestry Unit. Fenwood reports for work Sept. 18. A native of Westchester County, New York, Jim earned a bachelor's degree in wildlife management at the University of Maine and a master's degree in wildlife management at West Virginia University. He launched his Forest Service career in 1978 on the Ouachita National Forest in Arkansas, where he served as a district biologist, assistant ranger and the residential Youth Conservation Corps camp director.

• Pete Roussopoulos returned from his detail as Acting Deputy Chief for State and Private Forestry; Jack Troyer moves into the acting position while the search for a replacement for Joel Holtrop proceeds.

• Staffing changes in the Washington Office over the next several months include new National Program Leaders for Silviculture and for Global Climate Change. Outreach is underway for the retiring Clark Baldwin and Elvia Nebla.

• In the Department of Major Irony, the Associated Press reported that environmental activists erected a log cabin to block access to a timber sale in the Biscuit salvage area of southwestern Oregon. Wonder where they got the logs for the cabin?

• FAO reports that research and applications of biotechnology in forestry are advancing rapidly, mostly (around 70%) in developed countries. The United States, France and Canada are the most active players, with India and China the most active of the developing and in-transition countries. Forest biotechnology activities have spread to at least 140 tree genera, but most activities (around 60%) have focused on only six: Pinus, Eucalyptus, Picea, Populus, Quercus, and Acacia. Of the over 2700 biotechnology activities reported in the world over the past 10 years, genetic modification accounts for around 19 percent only. Overall, genetic modification activities in forestry are taking place in at least 35 countries, with the vast majority apparently restricted to the laboratory, with some supporting field trials. Worldwide, more than 210 field trials of genetically modified (GM) trees are currently under way in 16 countries; most of the trials are being conducted in the United States and are restricted largely to Populus, Pinus, Liquidambar and Eucalyptus. Only China has reported the commercial release of GM trees: around 1.4 million plants on 300-500 hectares in 2002. More information is available at http://www.fao.org/newsroom/en/news/2005/104906/index.html.

• The first commercial wind energy facility on National Forest Lands will be built on the Green Mountain National Forest in Vermont. The project is an expansion of an existing 11-turbine wind energy site located on private land in the southern portion of the forest. The project was originally scheduled to begin in February, but was temporarily delayed.

• These photos of the same piece of soil are from a silt loam surface layer (moist color 7.5 YR 4/4) that originated from Mt. Mazama, the volcano that erupted to produce Crater Lake about 6700 BP. The soil was scraped into a slash pile that was burned; the soil particles fused together. Thanks to Dick Cline, WO for these photos of thermally altered soil.

• The Forest Service has established an Agency Team to develop a framework for an integrated program for restoring and maintaining healthy forest and grassland ecological conditions. The framework will consider hazard mitigation for the protection of communities and critical resources. The need for this team was identified by the Executive Integration Team (EIT) following the completion of the "National Integrated Fuels and Restoration of Fire Adapted Ecosystem Review." The EIT is composed of the Directors of Forest Management, Fire and Aviation Management, Wildlife, Fisheries and Watershed Management, Forest Health Protection, Ecosystem Management Coordination, Vegetation Management and Protection Research and the National Fire Plan. The EIT identified a need for a "10- Year Framework for Restoration" based upon several findings from the integrated fuels and restoration review. The Team will develop a strategic, integrated, science-based framework for restoring and maintaining forest and grassland ecological condition that recognizes the continuing need for hazard mitigation treatments necessary to protect communities. The framework will define the context or scope of the problem and a system of planning that regions can use to plan and implement a systematic planning and treatment program that achieves objectives over a ten year period of time. Tom Crow from WO R&D staff is on the Core Team that was tasked with completing a draft of the framework by mid-July. Approval of the Framework is expected by September 2005.

• The Savannah River Ecology Lab (SREL), administered by the University of Georgia, is downsizing. According to Columns, a University of Georgia newspaper, about one-third of the 150 employees working under a contract with the Department of Energy were notified their positions will end September 30. The SREL is expected to experience a 47% decrease in funding in FY 2006. Operated for 54 years by the University of Georgia, SREL originally was to receive no funding from DOE in the next fiscal year.

Publications

FY 2005 Publications: (*denotes new publication this month)

Refereed Journals and Book Chapters

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Paladino, J.C.L., Guapyassú, M.S., Platais, G.H. 2005. Restoration practices in Brazil's Atlantic rainforest. Chapter 27 in Stanturf, J.A. and Madsen, P, eds. *Restoration of Temperate and Boreal Forests*. CRC Press, Boca Raton. P. 5409-422.

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From the Cover (Masthead) - Piedmont National Wildlife Refuge Fungi survey.

Amanita muscaria
Yellow Fly Agaric

Strobilomyces confuses
Old Man of the Woods

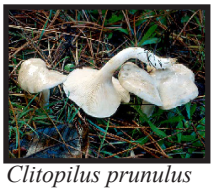
Tremella mesenterica
Witches Butter

Laetiporous sulphureus
Chicken Mushroom

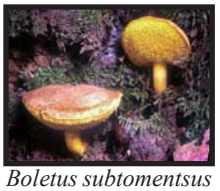
Amanita virosa
Destroying Angel

Geoglossum hirsutum
Velvety Earth Tongue

Lactarius volemus
Voluminous-Latex Milky



Clitopilus prunulus
Sweetbread



Boletus subtomentsus
Yellow-Cracked Bolete

Lycoperdon pyriforme
Pear-Shaped Puffball

Paxillus involutus
Poison Palillus

Pleurotus ostreatus
Oyster Muschroom

"If only one could tell true love from false love as one can tell mushrooms from toadstools."

Mansfield, Katherine
1888-1923 New Zealand-born British Author

Publications

Stanturf, Bland, Samuelson, Leininger, Burke. 2004. Three-year growth response of four clones of eastern cottonwood (*Populus deltoides* Bartr. ex Marsh.) to fertigation. Biomass and bioenergy production for economic and environmental benefits, Short Rotation Woody Crops Operations Working Group Biennial Meeting, Charleston, SC November 2004; p. 59 [Abstract]

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Upcoming Events:

2005

Aug 1-5	IEA Tasks 30 and 31 Joint Meeting, Perth, Australia; Stanturf to attend
Aug 5-7	IUFRO meeting, Improving Productivity in Mixed-Species Plantations, Southern Cross University, Lismore, Australia; contact dnichols@scu.edu.au
Aug 7-12	Ecological Society America annual meeting, Montreal, Canada; http://www.esa.org/montreal/. Outcalt to attend and present.
Aug 8-13	IUFRO World Congress, Brisbane, Australia. Stanturf to attend. http://www.iufro2005.com
Aug 29-31	Status, Trends, and Future of the South's Forest and Agricultural Biomass conference, Athens, GA; http://biomass.sref.info/conference.htm
Aug 29-31	White House Conference on Cooperative Conservation, St. Louis, MO; http://www.conservation.ceq./gov/about.html.
Sep 9-10	Pre-Conference Workshop in association with Pedometrics 2005 Conference, Gainesville, FL. http://conference.ifas.ufl.edu/pedometrics/#optional
Sep 10-12	European Forestry Institute annual conference and Scientific Seminar "Multifunctional Forest Ecosystem Management in Europe: Integrated approaches for considering the temporal, spatial and scientific dimensions" Centre Tecnològic Forestal de Catalunya (CTFC), Barcelona, Spain
Sep 12-14	Pedometrics 2005: Frontiers in Pedometrics, Naples, FL. http://conference.ifas.ufl.edu/pedometrics/
Sep 12	Fire Prevention - Wildland Urban Interface Exchange Workshop, Birmingham, AL; postponed from May
Sep 12-14	Southern Roundtable on Sustainable Forests Fall Conference, Asheville, NC; contact jenniferhayes@fs.fed.us
Sep 12-18	Society for Ecological Restoration 17th International Conference,Zaragoza, Spain. http://www.ecologicalrestoration.net

Upcoming Events:

Sep 20-21	NOAA/EPA Golden Jubilee Symposium on Air Quality Modeling and Its Applications, Durham, NC.
Sep 25-30	MEDPINE 3: International Conference on Conservation, Regeneration and Restoration of Mediterranean Pines and their Ecosystems, MAIB, Mediterranean Agronomic Institute of Bari - Valenzano (Bari), Italy. For further information contact: Angela Inchingolo or Elvira Loiudice (loiudice@iamb.it)
Sep 27-Oct 1	Workshop and meeting of the Scandinavian Disturbance Network, "The scale of natural disturbances from tree to stant, " sponsored by Lithuanian Forest research Institute and Instituite of Forestry and Rural Engineering of Estonian Agricultural University; Vilnius and Palanga, Lithuania
*Oct 4	14th BSSRC Planning Committee Meeting, Savannah, GA. Stanturf, K. Outcalt and Breland to attend
Oct 9-13	2nd International Conference on Mechanisms of Organic Matter Stabilization and Destabilization in Soils, Asilomar California, http://wwwdata.forestry.oregonstate.edu/SoilConf
Oct 15-20	International conference on "Metal fluxes and their stress on terrestrial ecosystems," Centro Stefano Franscini, Monte Verità, Ascona, Switzerland; http://www.waldschutz.ch/bioindic/monte_verita/
Oct 17-19	23rd Tall Timbers Fire Ecology Conference "Fire In Grassland and Shrubland Ecosystems", Bartlesville, OK; http://www.talltimbers.org
Oct 19-23	Society American Foresters Annual Meeting, Ft. Worth, TX, Outcalt to attend and present.
Oct 25-27	The Sixth Fire and Forest Meteorology Symposium, Canmore, AB,Canada. Liu to attend.
*Oct 27	Workshop on Fuels Treatments and Restoration of Longleaf Pine, Solon Dixon Forestry and Education Center, Andalusia, AL Outcalt, Outcalt, and Revell to present and attend.
Nov 6-10	Soil Science Society of American Annual Meeting, Salt Lake City, UT
Nov 7-11	IUFRO Tree Biotechnology 2005 Meeting, Pretoria, South Africa www.iufro.up.ac.za.
Nov 14-16	"Climate Science in Support of Decision making" conference, Arlington, Virginia; www.climatescience.gov/workshop2005/papers/index.php?authorsInstructions=1.
Nov 15-17	Fire in Eastern Oak Forests: Delivering Science to Managers, Ohio State University, Columbus, OH; contact Matt Dickinson mbdickinson@fs.fed.us
Dec 5-10	Forest Ecosystems in the Caribbean: Ecology to Development (from Basic Knowledge to Sustainable Management), Martinique, West Indies

2006

Jan 29-Feb 2	American Meteorological Society Annual Meeting, Atlanta, GA; http://www.ametsoc.org/meet/annual/
Jan 8-12	"Ecology in an Era of Globalization: Challenges and Opportunities for Environmental Scientists in the Americas," Merida, Yucatan, Mexico; www.esa.org/mexico
Feb 27-Mar 1	Central Hardwood Forest Conference, Knoxville, TN. http://fwf.ag.utk.edu/central/
March 27-30	"Fuels Management -- How to Measure Success" conference sponsored by the International Association of Wildland Fire (IAWF), Portland, OR; www.iawfonline.org
Mar 29-Apr 2	American Society Environmental History Annual Meeting, St. Paul, Minnesota; http://www.h-net.org/~environ/ASEH/conferences.html.
Apr 8-12	International Conference on Hydrology and Management of Forested Wetlands, New Bern, North Carolina; http://www.asae.org/imis/meeting/forestcall.cfm
*Jun 5-9	Fourth International Poplar Symposium, "Meeting the Needs of a Growing World through Poplar and Willow Science: Combining Traditional and Novel Approaches in the Genomic Era," Nanjing, China, IUFRO Poplar and Willow Working Party 2.08.04; http://ips2006.njfu.edu.cn/
Jul 9-15	18th World Congress of Soil Science, in Philadelphia, PA http://www.18wcss.org
Aug 8-10	Forest and Water in a Changing Environment Beijing, China; Chinese Academy of Forestry, Beijing Forestry University and Southern Research Station.
Oct 25-29	Society American Foresters Annual Meeting, Pittsburgh, PA
Nov 12-16	Soil Science Society of American Annual Meeting, Indianapolis, IN; http://www.indy.org
Nov 27-30	V International Conference on Forest Fire Research, Coimbra, Portugal http://www.fire.uni-freiburg.de/course/meeting/meet2004_25.htm

2007

Feb 26-Mar 1	14th Biennial Southern Silvicultural Research Conference, Savannah, GA;
Oct 24-28	Society American Foresters Annual Meeting, Portland, OR.
Nov 4-8	Soil Science Society of American Annual Meeting, New Orleans,

2008

Nov 5-9	Society American Foresters Annual Meeting, Reno, NV.LA; http://www.neworleanscvb.com

GPRA GPRA GPRA GPRA GPRA GPRA

GPRA -Accomplishment

Category	FY 2004 Total	FY 2005 Total
Number of Refereed Journal Publications	20	19
Number of Non-Refereed Publications (include abstracts)	89	36
Number of Publications (refereed + non-refereed)	109	55
Number of Tours	41	38
Number of Short Courses/Training	20	13
Number of Invited Presentations to Scientific Organizations	12	6
Number of Invited Presentation to Lay Organizations	30	31
Volunteer Presentations to Scientific Organizations (non-GPRA	42	46
Number of Technology Transfer Activities (other than above)	105	129
Outside Funding	$2,610,574	$3,688,734

Logs spread out to be sampled by Wood Quality Team in Ketchikan, Alaska.

SRS-4104 Project Leader's Report

John Stanturf - Editor Lynne Breland - Technical Writer
Patricia A. Outcalt - Production, Design and Layout

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